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**Cash Flow Trends and Their Fundamental Drivers: A Continuing Look  
Comprehensive Industry Review (Qtr 3, 2008)**

**INTRODUCTION**

**EXECUTIVE SUMMARY**

This research report is one of a series that looks at the cash flow performance of Corporate America. Our primary focus is on free cash margin, or free cash flow measured as a percent of revenue. We also look at the drivers or components of free cash margin in an effort to determine factors behind observed changes.

In the current study we conduct a comprehensive review of 20 four-digit GICS non-financial industries and their 61 six-digit GICS sub-industries for a series of rolling twelve-month periods from the first quarter of 2000 through the third quarter of 2008. After bottoming below 2.5% during the 2001 recession, free cash margin has improved markedly and has remained relatively stable above 4.5% since 2002, declining to just below 4.5% for the twelve months ended September 2008. Our expectation is that during the current recession, free cash margin will likely decline to levels that are at or below those found in the 2001 recession. The implication is that over the next year or so, median free cash flow could fall by 50% or more. In this report we provide a summary of our results and identify several representative companies. Please refer to the various industry reports that accompany this introduction for industry details.

Data for this research were provided by Cash Flow Analytics, LLC., [www.cashflowanalytics.com](http://www.cashflowanalytics.com).  
Charles Mulford is a principal in Cash Flow Analytics, LLC.

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**Georgia Tech Financial Analysis Lab**

The Georgia Tech Financial Analysis Lab conducts research on issues of financial reporting and analysis. Unbiased information is vital to effective investment decision-making. Accordingly, we think that independent research organizations, such as our own, have an important role to play in providing information to market participants.

Because our Lab is housed within a university, all of our research reports have an educational quality, as they are designed to impart knowledge and understanding to those who read them. Our focus is on issues that we believe will be of interest to a large segment of stock market participants. Depending on the issue, we may focus our attention on individual companies, groups of companies, or on large segments of the market at large.

A recurring theme in our work is the identification of reporting practices that give investors a misleading signal, whether positive or negative, of corporate earning power. We define earning power as the ability to generate a sustainable stream of earnings that is backed by cash flow. Accordingly, our research may look into reporting practices that affect either earnings or cash flow, or both. At times, our research may look at stock prices generally, though from a fundamental and not technical point of view.

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## Cash Flow Trends and Their Fundamental Drivers: A Continuing Look

### Comprehensive Industry Review (Qtr 3, 2008)

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## **Cash Flow Trends and Their Fundamental Drivers: A Continuing Look**

### **Comprehensive Industry Review (Qtr 3, 2008)**

#### **Introduction**

This research report is part of a continuing series of reports that examine cash flow trends and the underlying drivers that are causing changes in those trends. In the current study we conduct a comprehensive review of 20 four-digit GICS non-financial industries and their 61 six-digit GICS sub-industries for a series of rolling twelve-month periods from the first quarter of 2000 through the third quarter of 2008. All companies with a current market cap of \$50 million or more are included. Please see pages 5-7 for a list of industries and sub-industries included. That list is followed by a summary of our findings. The industry reports themselves are presented in separate studies that accompany this introduction.

The objective of our research is to examine the many factors that are driving observed cash flow trends. However, we think that one cash flow metric stands out as being particularly relevant to financial performance: free cash margin. Measured as free cash flow divided by revenue, free cash margin is a cash flow profit margin. It indicates what percent of revenue is left for shareholders in the form of free and discretionary cash flow. If the company sells its products or services for a dollar, free cash margin tells us how many cents the shareholders can take home without reducing the company's ability to generate more. Thus, as we look at cash flow trends and their underlying drivers, our particular interest is on how those factors impact free cash margin.

#### **Our Continuing Focus on Cash Flow**

Corporate financial success is dependent not only on a company's ability to generate revenues and earnings, but also cash flow, especially free cash flow. It is free cash flow and growth in free cash flow, that discretionary stream of cash that a company can put to use for acquisitions, debt retirement, dividends and stock buybacks that works with growing earnings to drive firm value higher. Because it is "free," free cash flow comes with no strings attached. It is truly discretionary. Spending it does not impact the company's ability to generate more.

A company with revenue growth will eventually lose the favor of investors if it never finds a way to generate earnings. In a similar way, a company with profits that is unable to generate cash will also experience waning investor enthusiasm. It may take a while. Investors are patient with profitable, growing companies. Ultimately, however, a company must show an ability to generate free cash flow.

Companies that consume cash must continually seek new sources of capital – whether debt or equity. At some point, those sources of capital will dry up or become prohibitively expensive if the firm does not show at least some progress toward getting closer to positive cash generation.

Worse, if cash flow does not back a company's earnings, ultimately those earnings themselves may become suspect, necessitating write-downs of the resulting non-cash assets. Net losses will likely accompany those write-downs.

### **Cash Flows During Recessions**

During periods of economic contraction, revenues and profitability decline. A company's ability to generate cash flow declines as well. A decline in a firm's ability to generate cash is of particular concern given the importance of cash flow to a firm's economic well being.

When free cash margin is positive, a firm is covering all ongoing claims and is able to pay dividends, reduce debt or simply add to its cash coffers. When free cash margin turns negative, ongoing claims are not being met. Cash and short-term investments can be used to meet the shortfall. However, on-hand cash and short-term investments are not an unlimited source of funds. Firms can borrow money to meet their needs, but even if this were an option, increasing debt levels add new, unwanted risks. Equity issues provide another avenue, but capital markets are painfully dilutive when share prices are depressed by recession. Thus, free cash margin serves as an important measure of long-term financial health and one that is particularly relevant during a recession.

We think that by periodically examining their cash generating ability, we will gain insight into the overall financial health of important segments of U.S. firms such as the S&P 500, or of different industry groups. With data dating back to 2000, we will see how the cash-generating performance of these firms presently compares with their performance during the 2001 recession.

### **Cash Flow Definitions**

Free cash flow is the cash flow equivalent of the income statement "bottom line." Like net income, free cash flow is available for shareholders after all prior claims have been satisfied. However, also like net income, which, to facilitate analysis, can be divided into certain sub-measures of performance, like gross profit and operating profit, free cash flow can be similarly divided. Thus, while our primary focus is on free cash flow and free cash margin, or free cash flow as a percentage of revenue, we analyze here the fundamental drivers underlying two distinct, but also closely related, measures of cash flow:

- 1) Operating cash flow and operating cash margin - cash flow from operations after interest charges and income taxes. Operating cash margin is operating cash flow divided by revenue.
- 2) Free cash flow and free cash margin - cash flow available for common shareholders that can be used for such discretionary purposes as stock buybacks and dividends without affecting the firm's ability to grow and generate more. This measure is calculated as operating cash flow less

preferred dividends and net capital expenditures. Free cash margin is free cash flow divided by revenue.

## Data and Methodology

Our data is provided by Cash Flow Analytics, LLC.<sup>1</sup> As noted, each data amount is for a rolling twelve-month period ending with the quarter end in question. For example, cash flow amounts for September 30, 2008 represent amounts for the twelve months (four quarters) ending September 30, 2008.

## Industries

The 20 four-digit GICS industries and 61 six-digit GICS sub-industries are as follows:

- **Energy – 1010**
  - Energy Equipment & Services – 101010
  - Oil, Gas & Consumable Fuels – 101020
- **Materials – 1510**
  - Chemicals – 151010
  - Construction Materials – 151020
  - Containers & Packaging – 151030
  - Metals & Mining – 151040
  - Paper & Forest Products – 151050
- **Capital Goods – 2010**
  - Aerospace & Defense – 201010
  - Building Products – 201020
  - Construction & Engineering – 201030
  - Electrical Equipment – 201040
  - Industrial Conglomerates – 201050
  - Machinery – 201060
  - Trading Companies & Distributors – 201070
- **Commercial & Professional Services – 2020**
  - Commercial Services & Supplies – 202010
  - Professional Services – 202020
- **Transportation – 2030**
  - Air Freight & Logistics – 203010
  - Airlines – 203020
  - Marine – 203030
  - Road & Rail – 203040
  - Transportation Infrastructure – 203050
- **Automobiles & Components – 2510**
  - Auto Components – 251010
  - Automobiles – 251020

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<sup>1</sup> Cash Flow Analytics, LLC, 1727 Malvern Place, Duluth, Georgia, 30097. [www.cashflowanalytics.com](http://www.cashflowanalytics.com). Charles Mulford is a principal in Cash Flow Analytics, LLC.

Cash Flow Trends and Their Fundamental Drivers: A Continuing Look. The S&P 500 Non-financials (Qtr 3 2008). (c) 2009 by the College of Management, Georgia Institute of Technology, Atlanta, GA 30332-0520.

- **Consumer Durables & Apparel – 2520**
  - Household Durables – 252010
  - Leisure Equipment & Products – 252020
  - Textiles, Apparel & Luxury Goods – 252030
- **Consumer Services – 2530**
  - Hotels, Restaurants & Leisure – 253010
  - Diversified Consumer Services – 253020
- **Media – 2540**
  - Media – 254010
- **Retailing – 2550**
  - Distributors – 255010
  - Internet & Catalog Retail – 255020
  - Multiline Retail – 255030
  - Specialty Retail – 255040
- **Food & Staples Retailing – 3010**
  - Food & Staples Retailing – 301010
- **Food Beverage & Tobacco – 3020**
  - Beverages – 302010
  - Food Products – 302020
  - Tobacco – 302030
- **Household & Personal Products – 3030**
  - Household Products – 303010
  - Personal Products – 303020
- **Health Care Equipment & Services – 3510**
  - Health Care Equipment & Supplies – 351010
  - Health Care Providers & Services – 351020
  - Health Care Technology – 351030
- **Pharmaceuticals, Biotechnology & Life Sciences – 3520**
  - Biotechnology – 352010
  - Pharmaceuticals – 352020
  - Life Sciences Tools & Services – 352030
- **Software & Services – 4510**
  - Internet Software & Services – 451010
  - It Services – 451020
  - Software – 451030
- **Technology Hardware & Equipment - 4520**
  - Communications Equipment – 452010
  - Computers & Peripherals – 452020
  - Electronic Equipment, Instruments & Components – 452030
  - Office Electronics – 452040
  - Semiconductor Equipment & Products – 452050
- **Semiconductors & Semiconductor Equipment – 4530**
  - Semiconductors & Semiconductor Equipment – 453010
- **Telecommunication Services – 5010**
  - Diversified Telecommunication Services – 501010
  - Wireless Telecommunication Services – 501020



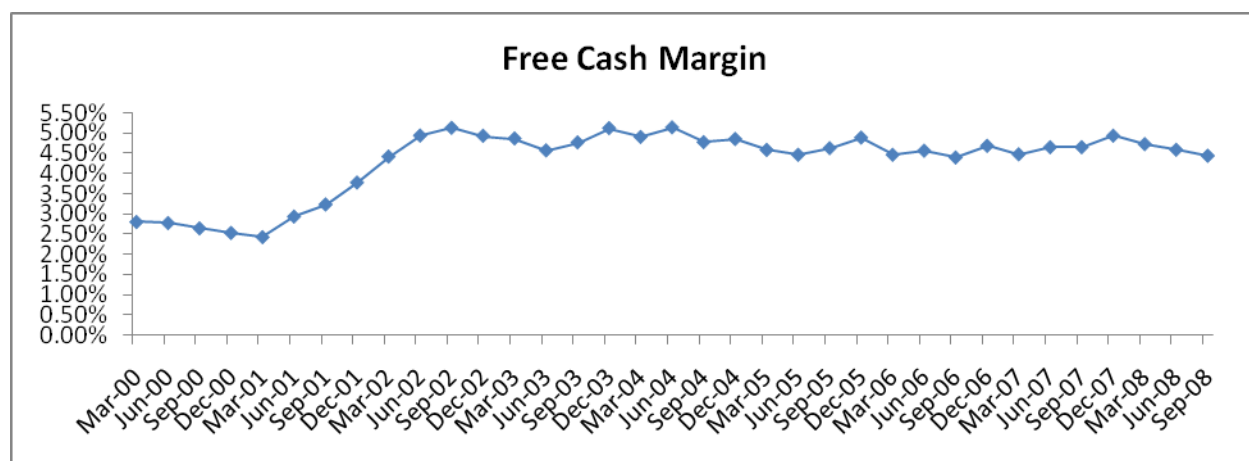
- **Utilities – 5510**
- Electric Utilities – 551010
- Gas Utilities – 551020
- Multi-utilities – 551030
- Water Utilities – 551040
- Independent Power Producers & Energy Traders – 551050

## Summary of Results

In the Exhibit below we present a graph of free cash margin for our complete sample of companies, including all industries and sub-industries. That summary graph is followed with an Exhibit that shows the trend in free cash margin for each of the 20 industry groups. For more details, please refer to the individual industry reports that accompany this introduction.

Referring to the results for all industries in the Exhibit below, it can be seen that after bottoming below 2.5% during the 2001 recession, median free cash margin has improved markedly and has remained relatively stable above 4.5% since 2002. It is important to note, however, that for the twelve months ended September 2008, free cash margin had declined to the low end of its recent range. Our expectation is that during the current recession, free cash margin will likely decline to levels that are at or below those found in the 2001 recession. The implication is that over the next year or so, median free cash flow could fall by 50% or more.

## All Industries, 2000 - 2008



In observing the individual industry trends in free cash margin, the stability seen in the sample-wide data is not apparent for all industries studied. For example, of the 20 four-digit GICS industries studied, during the twelve months ended September 2008 when compared with the twelve months ended September 2007, we saw improving free cash margin in seven industries, Cash Flow Trends and Their Fundamental Drivers: A Continuing Look. The S&P 500 Non-financials (Qtr 3 2008). (c) 2009 by the College of Management, Georgia Institute of Technology, Atlanta, GA 30332-0520. 8



relatively stable free cash margin in five industries, and declining free cash margin in eight industries. More specifically, our results show the following trends in free cash margin:

**Industries with improving free cash margin:**

- Energy (GICS 1010)
- Transportation (GICS 2030)
- Media (GICS 2540)
- Retailing (GICS 2550)
- Food and Staples Retailing (GICS 3010)
- Pharmaceuticals, Biotechnology and Life Sciences (GICS 3520)
- Technology Hardware and Equipment (GICS 4520)

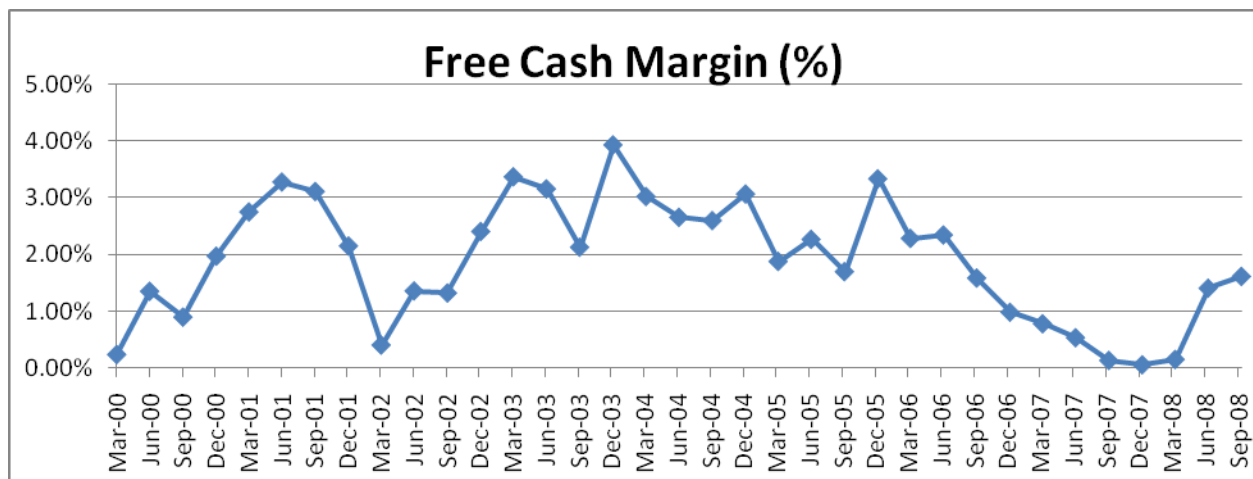
**Industries with stable free cash margin:**

- Commercial and Professional Services (GICS 2020)
- Consumer Services (GICS 2530)
- Healthcare Equipment and Services (GICS 3510)
- Software and Services (GICS 4510)
- Semiconductors and Semiconductor Equipment (GICS 4530)

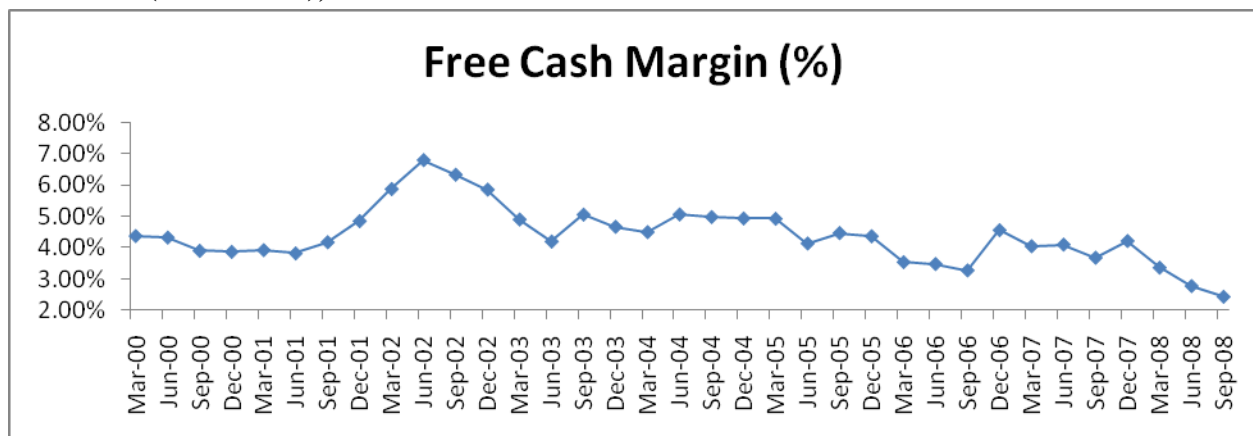
**Industries with declining free cash margin:**

- Materials (GICS 1510)
- Capital Goods (GICS 2010)
- Automobiles and Components (GICS 2510)
- Consumer Durables and Apparel (GICS 2520)
- Food, Beverage and Tobacco (GICS 3020)
- Household and Personal Products (GICS 3030)
- Telecommunications Services (GICS 5010)
- Utilities (GICS 5510)

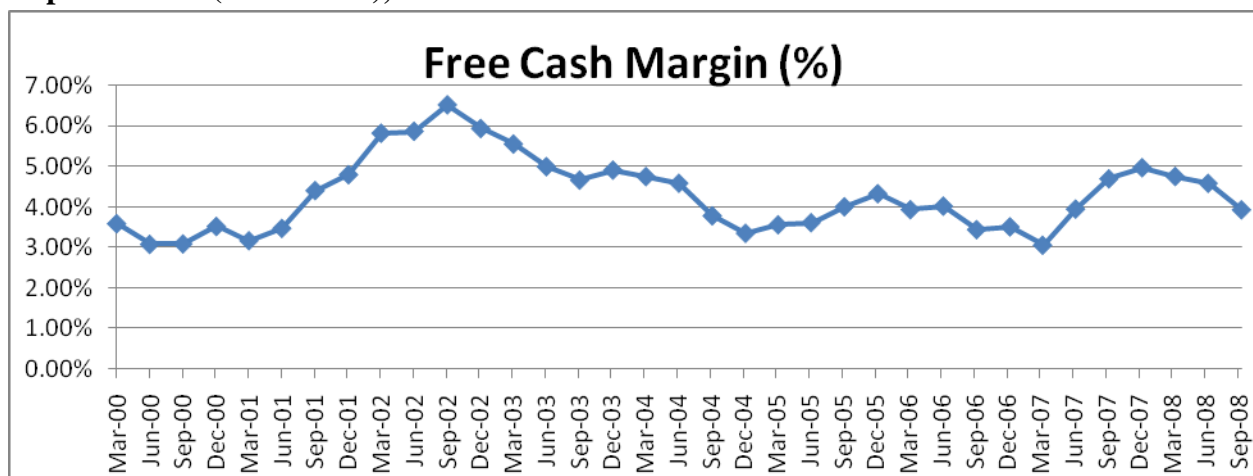
Please refer to the individual industry exhibits that follow and to the separate industry research reports that accompany this report.

**Energy (GICS 1010), 2000 - 2008**

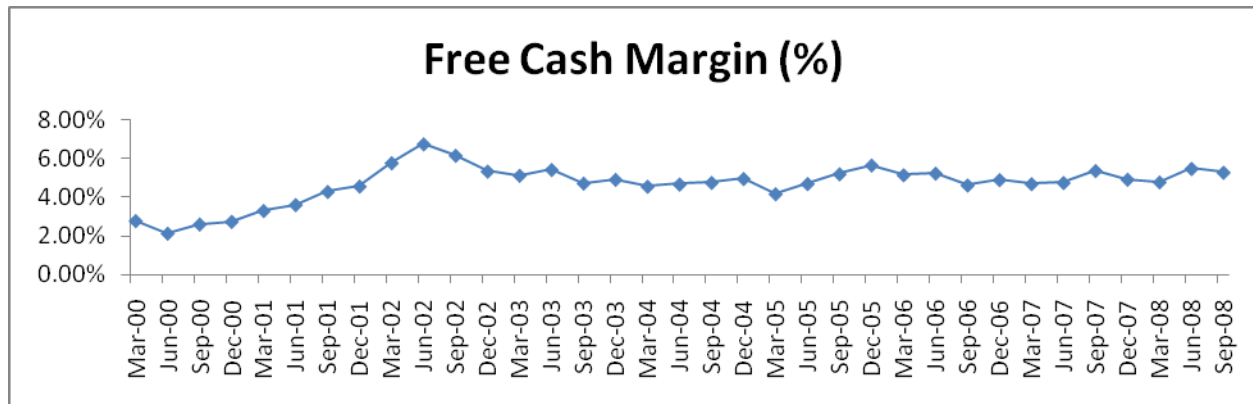
See separate report for details.

**Materials (GICS 1510), 2000 - 2008**

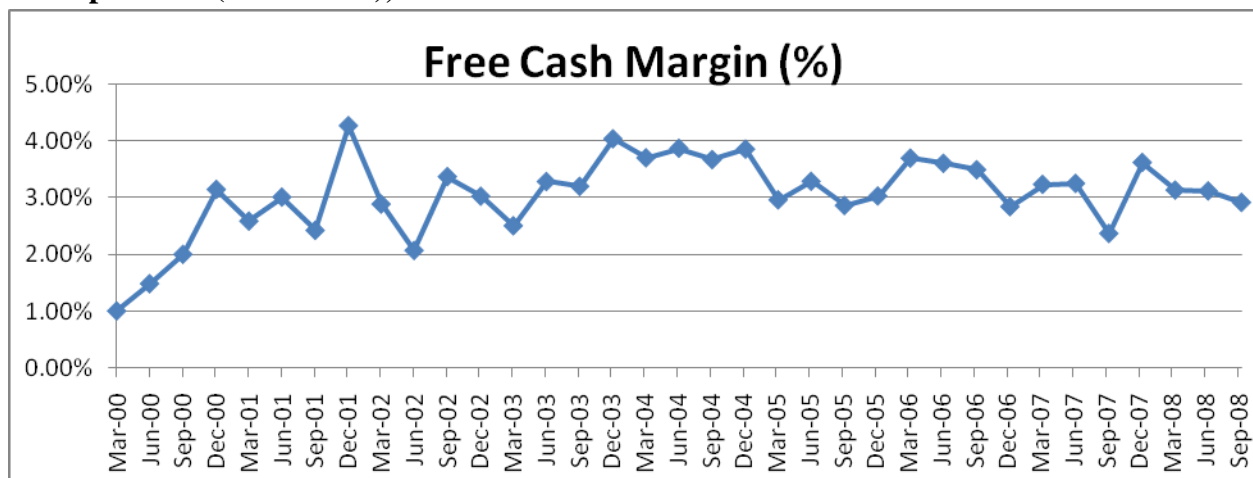
See separate report for details.

**Capital Goods (GICS 2010), 2000 - 2008**

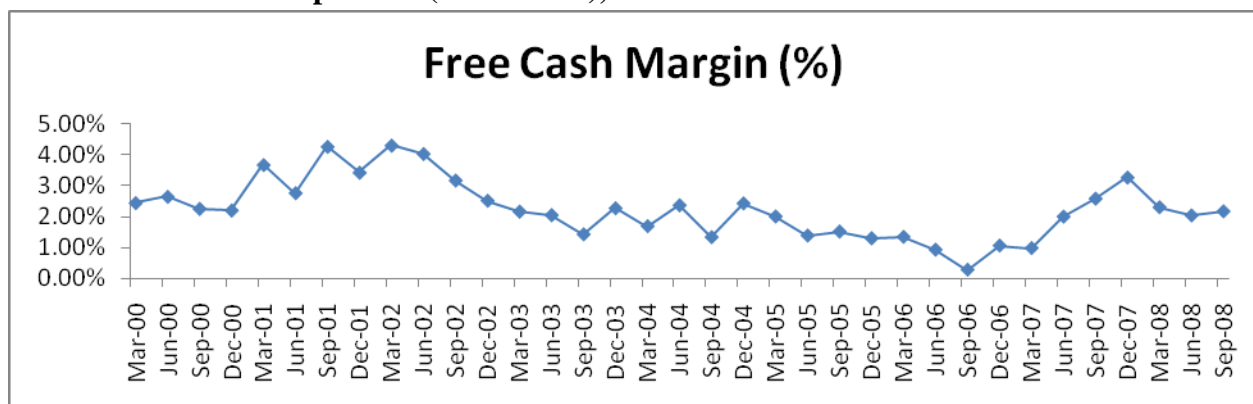
See separate report for details.

**Commercial and Professional Services (GICS 2020), 2000 - 2008**

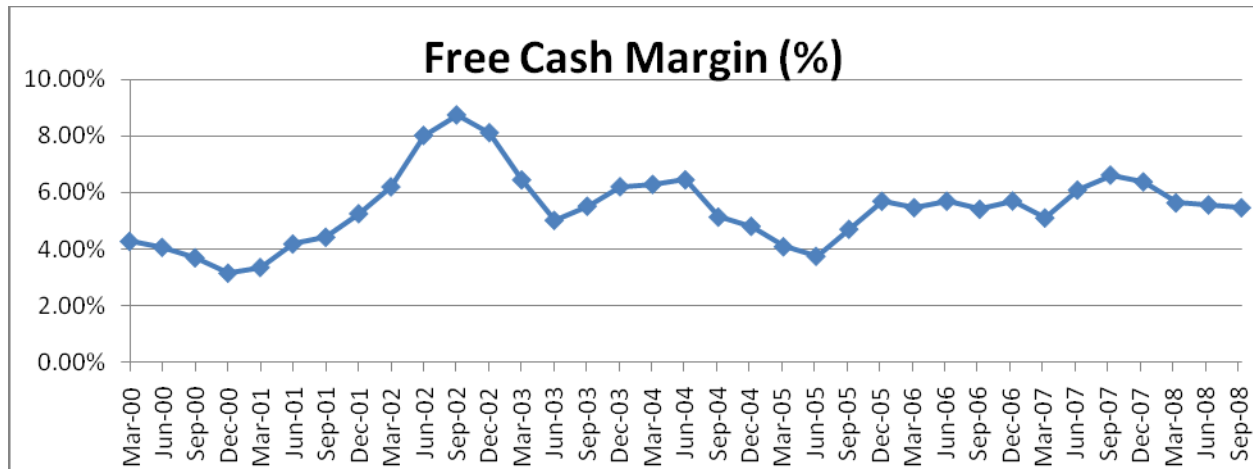
See separate report for details.

**Transportation (GICS 2030), 2000 - 2008**

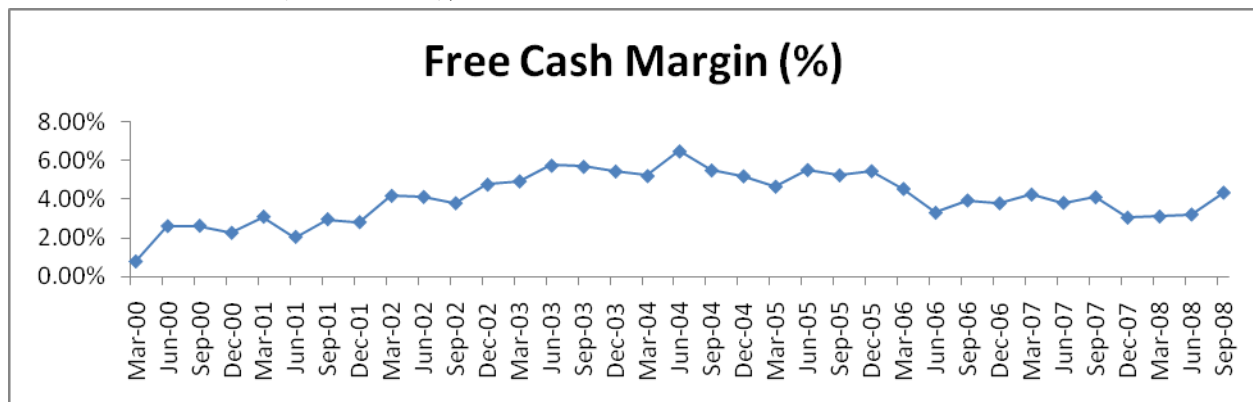
See separate report for details.

**Automobiles and Components (GICS 2510), 2000 - 2008**

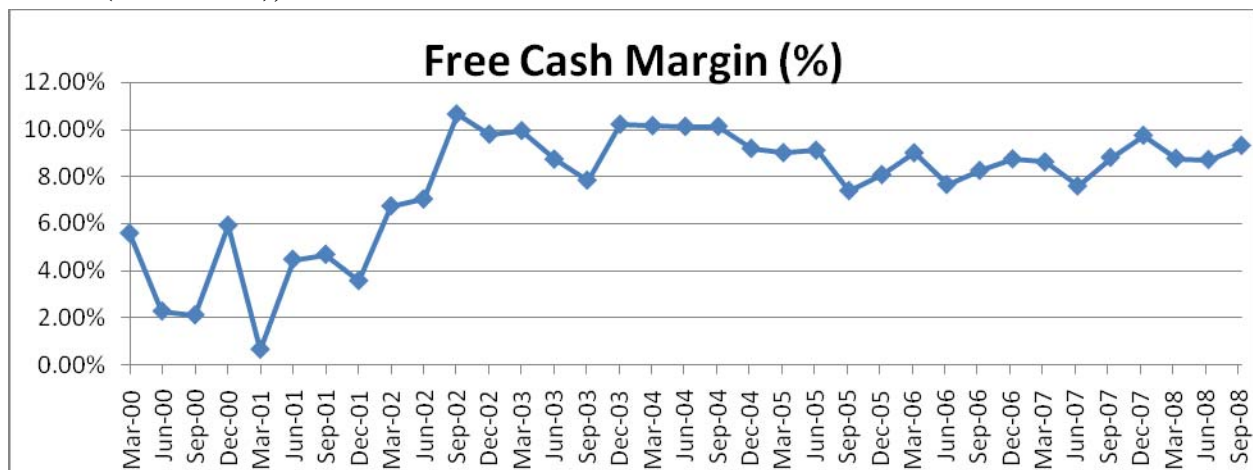
See separate report for details.

**Consumer Durables and Apparel (GICS 2520), 2000 - 2008**

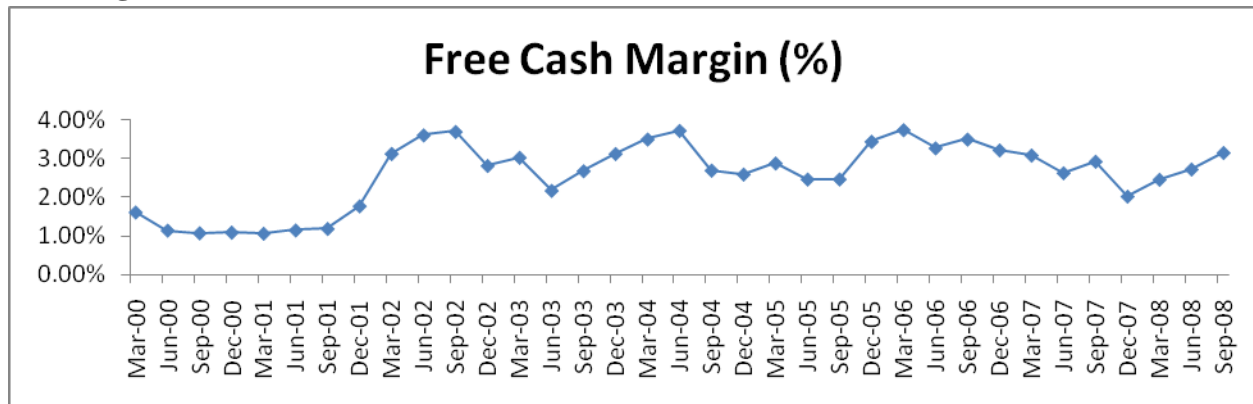
See separate report for details.

**Consumer Services (GICS 2530), 2000 - 2008**

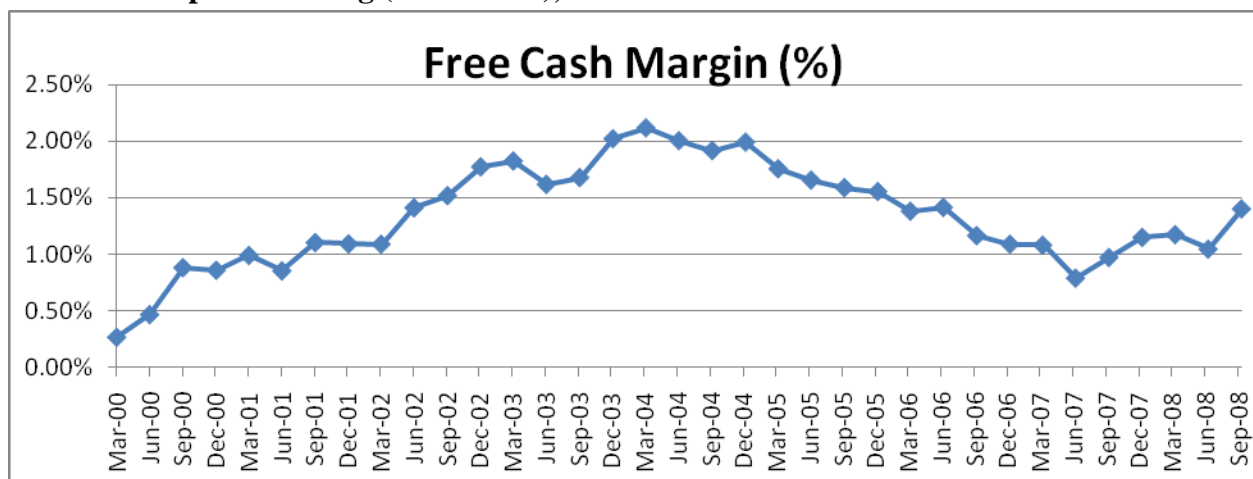
See separate report for details.

**Media (GICS 2540), 2000 - 2008**

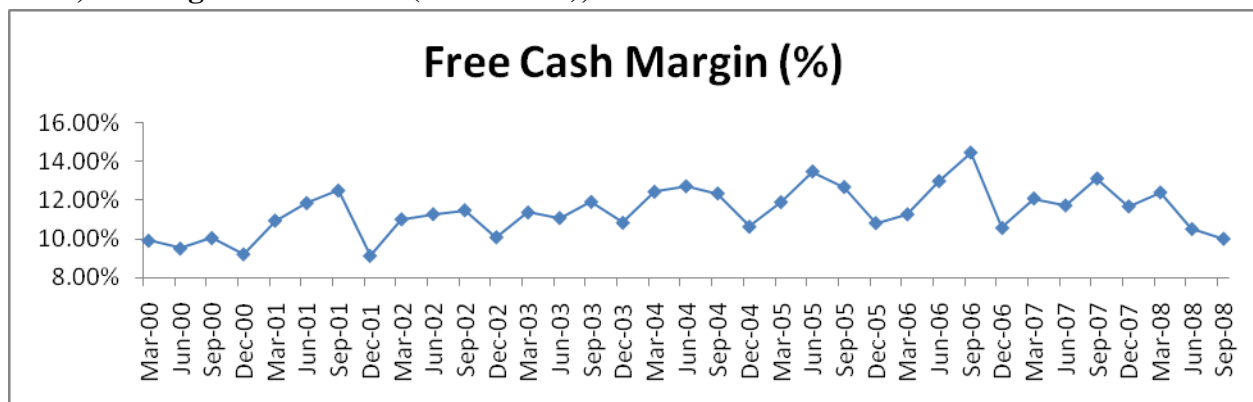
See separate report for details.

**Retailing (GICS 2550), 2000 - 2008**

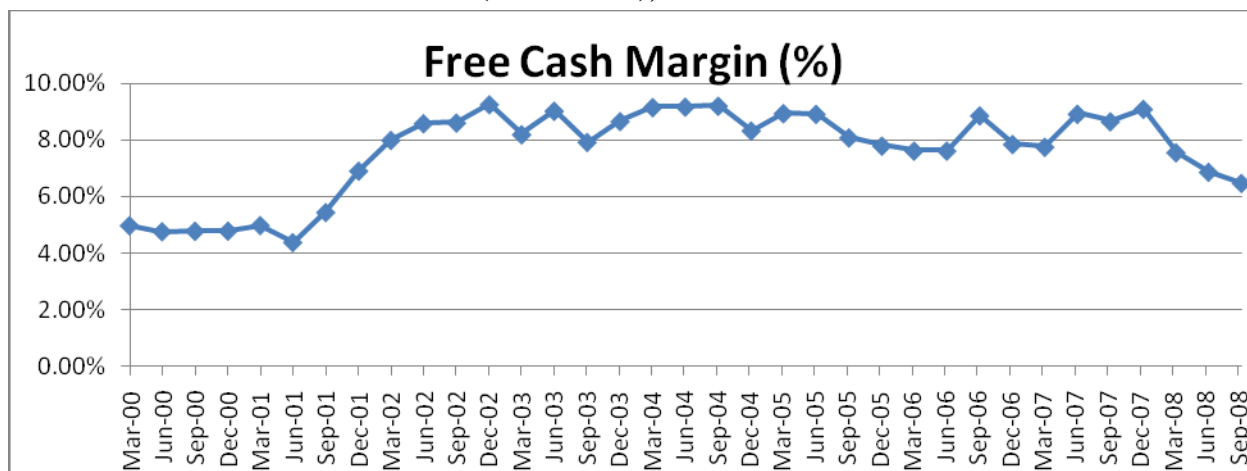
See separate report for details.

**Food and Staples Retailing (GICS 3010), 2000 - 2008**

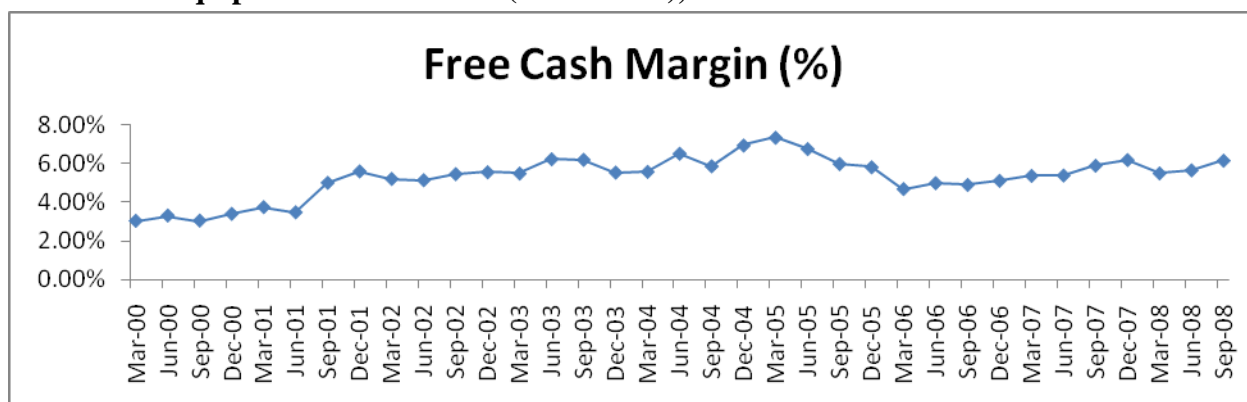
See separate report for details.

**Food, Beverage and Tobacco (GICS 3020), 2000 - 2008**

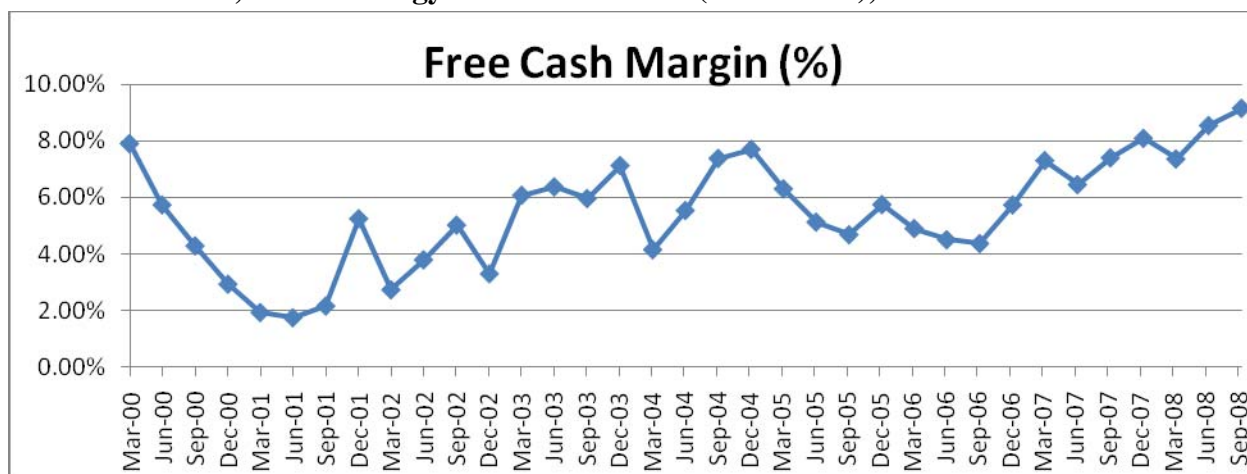
See separate report for details.

**Household and Personal Products (GICS 3030), 2000 - 2008**

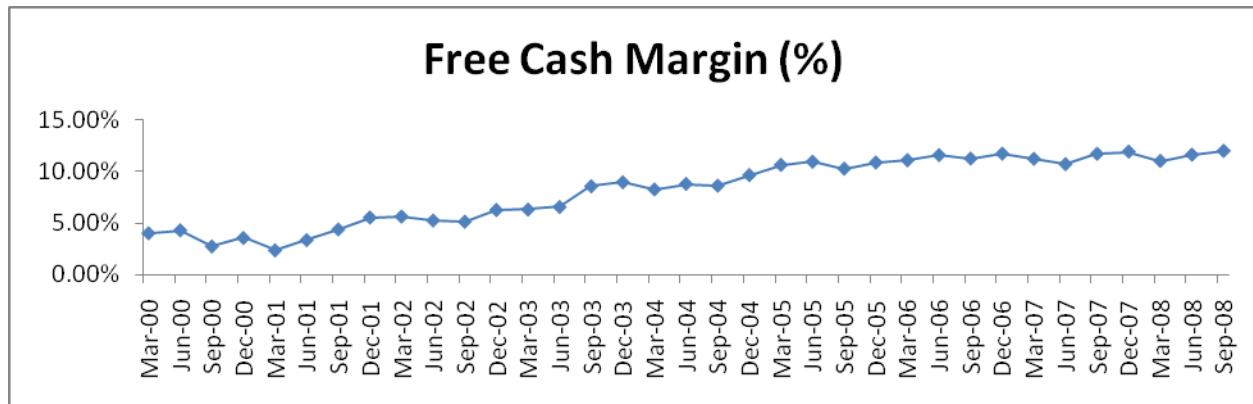
See separate report for details.

**Healthcare Equipment and Services (GICS 3510), 2000 - 2008**

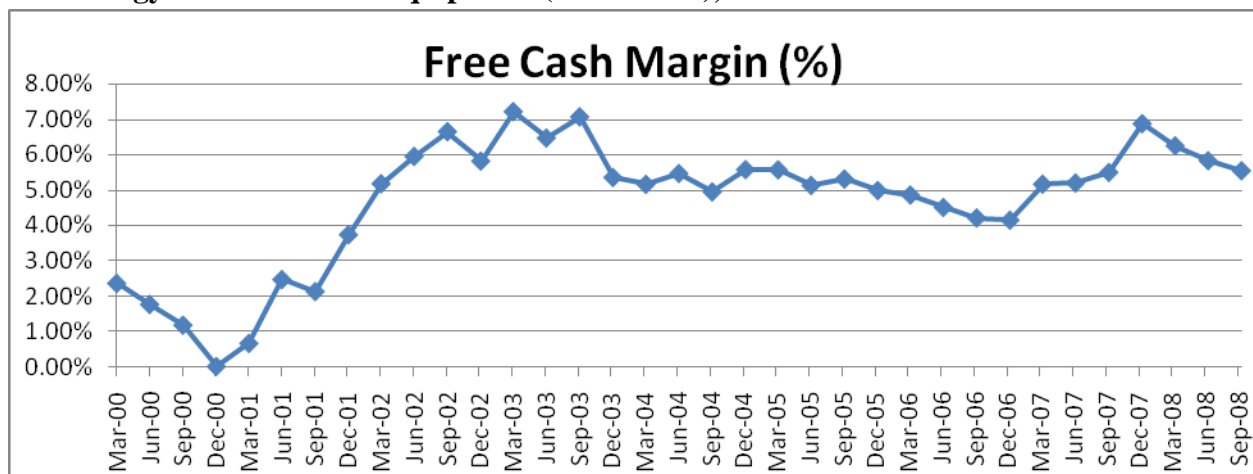
See separate report for details.

**Pharmaceuticals, Biotechnology and Life Sciences (GICS 3520), 2000 - 2008**

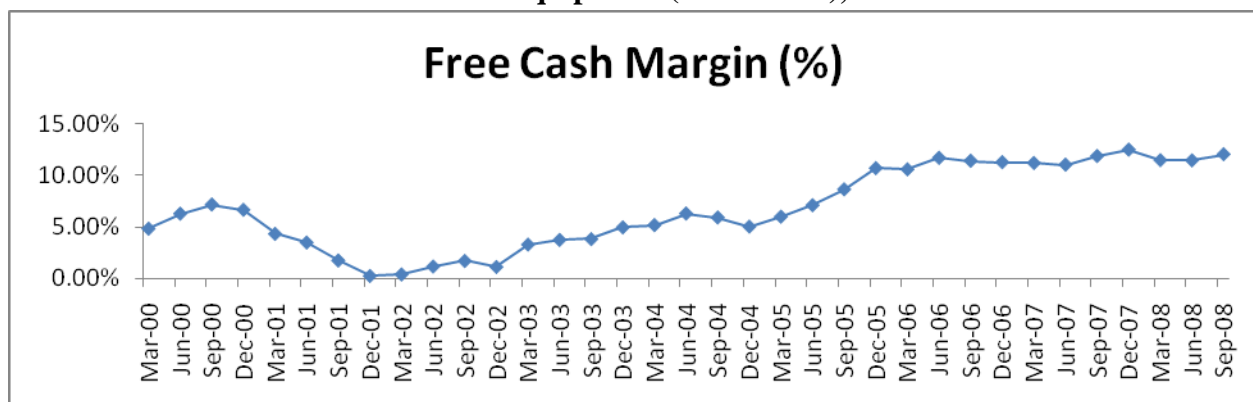
See separate report for details.

**Software and Services (GICS 4510), 2000 - 2008**

See separate report for details.

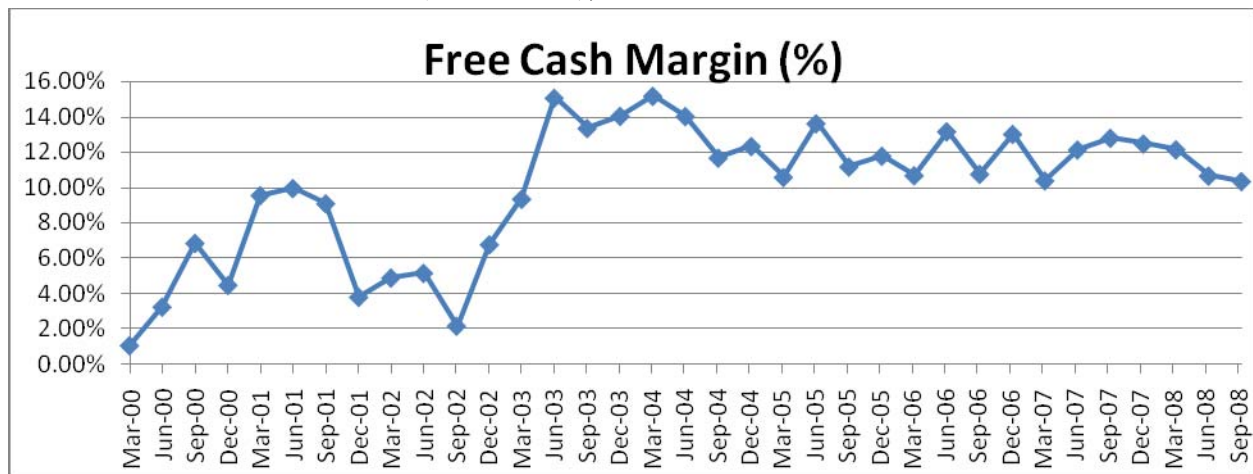
**Technology Hardware and Equipment (GICS 4520), 2000 - 2008**

See separate report for details.

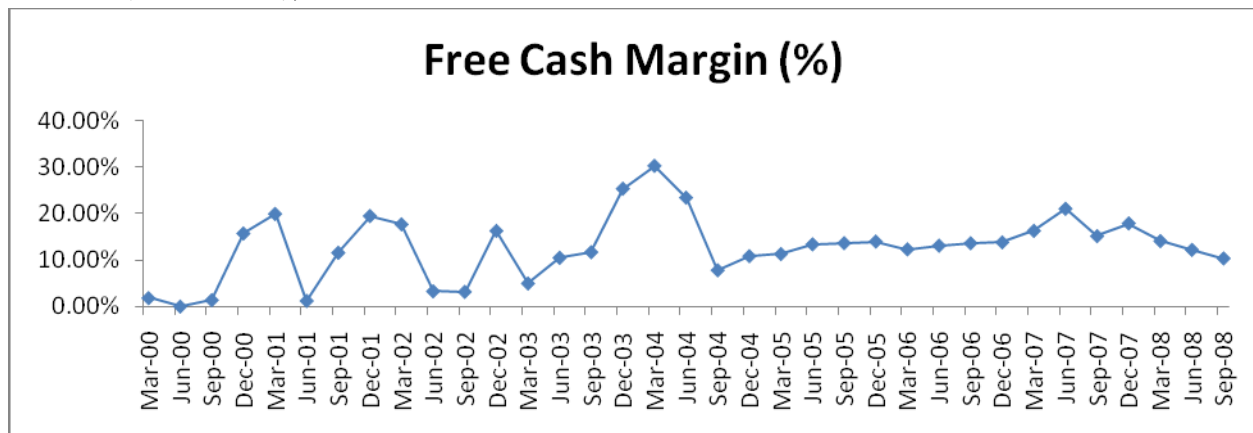
**Semiconductors and Semiconductor Equipment (GICS 4530), 2000 - 2008**

See separate report for details.



**Telecommunications Services (GICS 5010), 2000 - 2008**

See separate report for details.

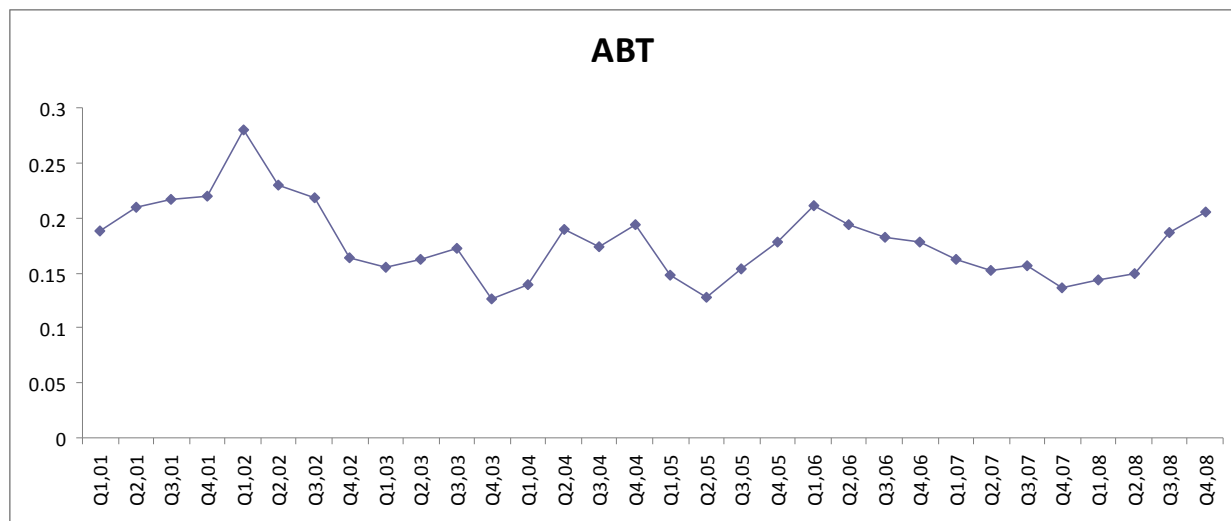
**Utilities (GICS 5510), 2000 - 2008**

See separate report for details.

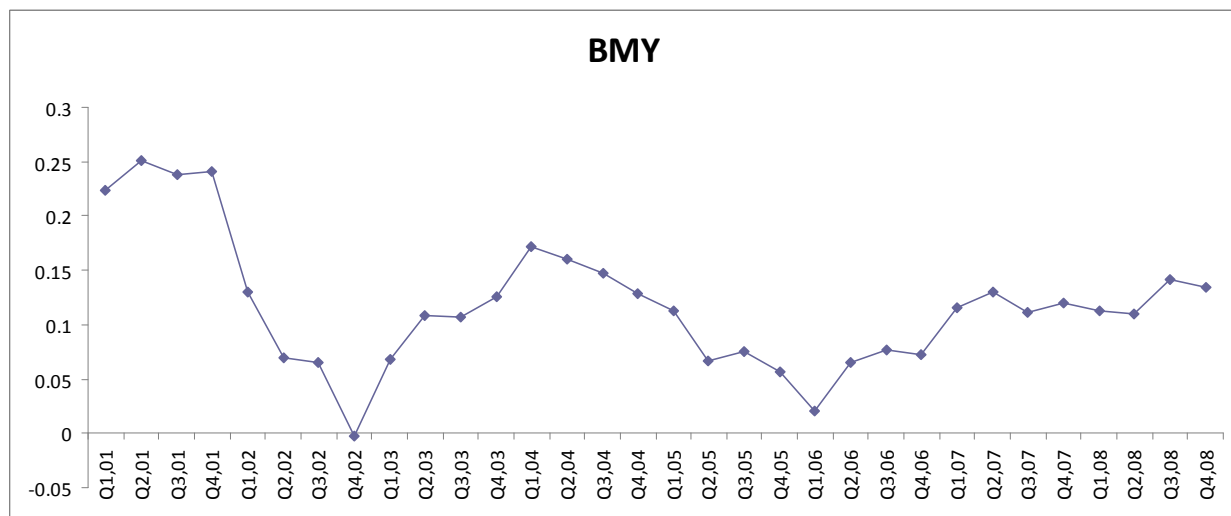
### The Standouts: A Closer Look

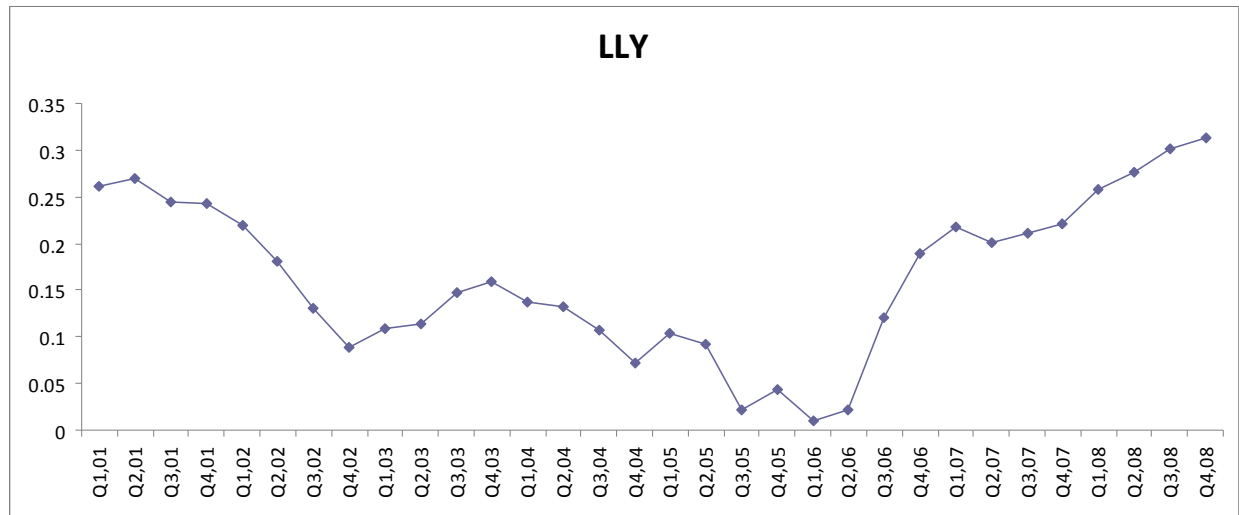
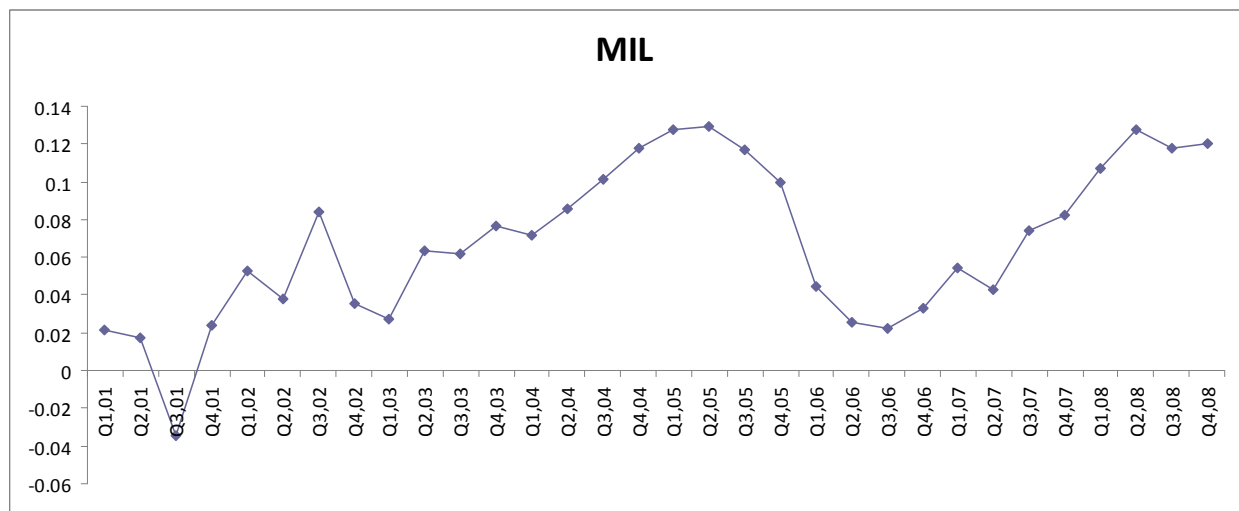
One industry that stands out among the seven with improving free cash margin is Pharmaceuticals, Biotechnology and Life Sciences (GICS 3520). For this group, free cash margin improved to 9.15% for the twelve months ended September 2008, up from 7.40% at September 2007. Four companies in this industry from the S&P 500 that showed particular improvement are Abbott Laboratories, Bristol-Myers Squibb Co., Lilly (Eli) & Co., and Millipore Corp. Graphs of free cash margin for these companies across the period studied are provided below. For more details regarding the industry, please refer to the separate industry research reports that accompany this report.

#### Abbott Laboratories, Free Cash Margin, 2000 - 2008



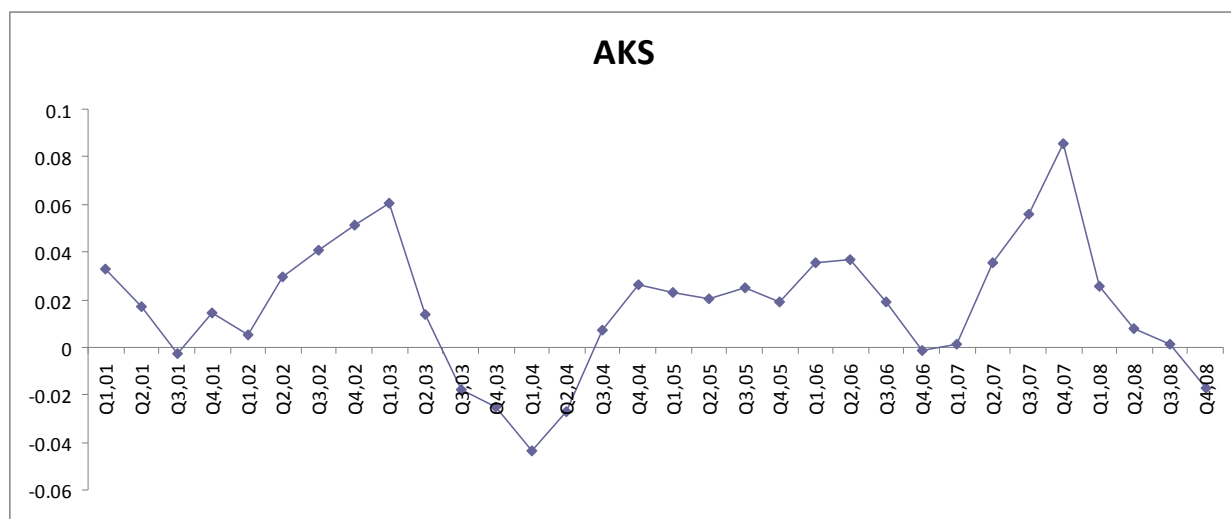
#### Bristol-Myers Squibb Co., Free Cash Margin, 2000 - 2008



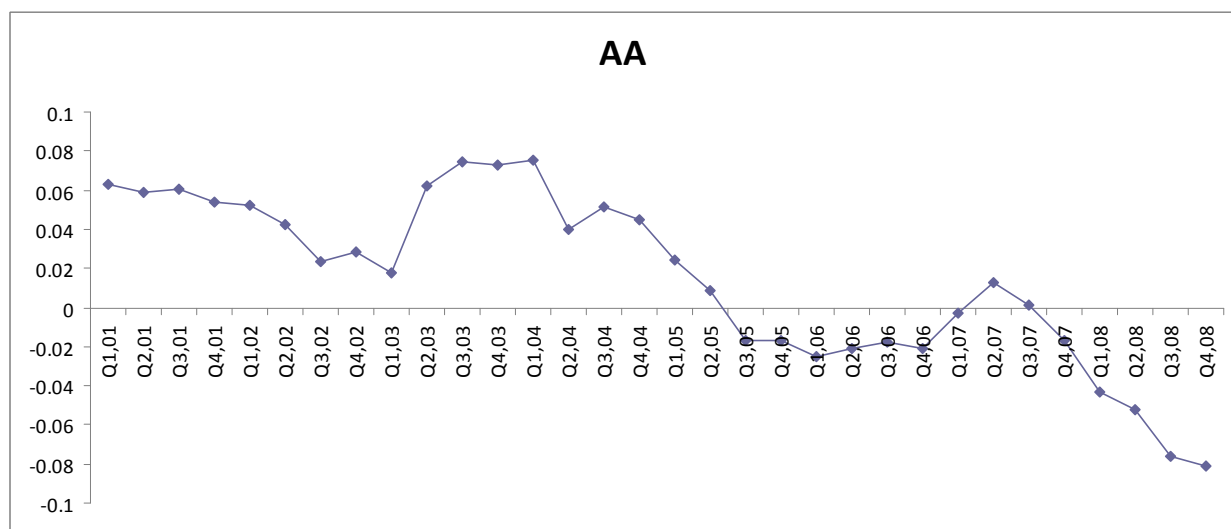
**Lilly (Eli) & Co., Free Cash Margin, 2000 - 2008****Millipore Corp., Free Cash Margin, 2000 - 2008**

Among the industries with declining free cash margin is the Materials group (GICS 1510). Sub-industries included here are Chemicals (GICS 151010), Construction Materials (GICS 151020), Containers & Packaging (GICS 151030), Metals & Mining (GICS 151040) and Paper & Forest Products (151050). Overall for this industry, free cash margin declined to 2.42% for the twelve months ended September 2008, down from 3.68% for the same period in 2007 and down from nearly 4% during the 2001 recession. Three companies in this industry from the S&P 500 for which stress in free cash margin was apparent are AK Steel Holding Corp., Alcoa, Inc., and Weyerhaeuser Co. Graphs of free cash margin for these companies across the period studied are provided below. For more details regarding the industry, please refer to the separate industry research reports that accompany this report.

### AK Steel Holding Corp., Free Cash Margin, 2000 - 2008



### Alcoa, Inc., Free Cash Margin, 2000 - 2008



**Weyerhaeuser Co., Free Cash Margin, 2000 - 2008**